

Appendix 11

EMISSION REDUCTION PLAN

APPENDIX 11 – EMISSION REDUCTION PLAN

Introduction and Background

The NAC 445B.230 requires each person able to cause the emissions of more than 100 tons or more per year of a regulated air pollutant from a stationary source to prepare and submit a plan for reducing or eliminating emissions from the source in accordance with the Nevada air quality plan episode stages of alert, warning, and emergency.

The purpose of an emergency episode plan is to prevent the occurrence or reduce the effect of Air Pollution Emergency Episodes (APEEs) in the Air Quality Control Regions in the state of Nevada. An APEE is defined in Section 6 of the State Implementation Plan as sufficiency high levels of ambient air pollutant concentrations at a given location that could cause imminent and substantial danger to human health. The concentrations identified by EPA to pose a substantial danger to human health are given in Table 11.1 below.

Table 11.1 – Concentrations Substantially Dangerous to Human Health

Pollutant	Averaging Period	Concentration ug/m³ (ppm)
PM ₁₀	24-hr	600
SO ₂	24-hr	2,620 (1)
CO	8-hr	57,500 (50)
CO	4-hr	86.3 (75)
CO	1-hr	144 (125)
NO ₂	24-hr	938 (0.5)
NO ₂	1-hr	3,750 (2)
O ₃	2-hr	1,200 (0.6)

An emergency episode is preceded by either a condition indicating the likely onset of an episode, or a condition describing that point to which air quality should never deteriorate. The first condition might be thought of as a forecast condition. For example, whenever meteorological conditions are such that the air is likely to remain stagnant for 24 hours or more, it is possible that air contaminants could build up to harmful levels. The second condition would be an observed condition in which levels of air contamination that could cause substantial endangerment to individuals during episode conditions are measured by an air quality monitor.

For the purposes of emergency action planning, and to ensure emission reduction actions start soon enough to prevent an air contaminant from reaching the concentrations listed above, criteria are defined for each episode stage of alert, warning, and emergency.

- The alert stage is reached when meteorological conditions or real time pollutant concentration data forecast that pollutant concentrations may reach unhealthful levels for 12 or more hours, or if the pollutant concentrations have the potential to increase beyond the alert stage (unless control actions are taken), or, in the case of ozone, the situation is likely to recur within the next 24-hours unless control actions are taken.

- The warning stage is reached when conditions or concentration data have continued to deteriorate and are still forecast to reach unhealthful levels for 12 or more hours, or if the concentrations have the potential to increase beyond the alert stage (unless control actions are taken), or, in the case of ozone, the situation is likely to recur within the next 24-hours unless control actions are taken.
- The emergency stage is reached when the continued degradation of air quality toward a concentration at which significant endangerment to human health may occur.

The concentrations defining the three stages are shown in Table 11.2 below.

Table 11.2 – Episode Stage Pollutant Levels

Pollutant	Averaging Period	Alert ug/m³ (ppm)	Warning ug/m³ (ppm)	Emergency ug/m³ (ppm)
PM ₁₀	24-hr	350	420	500
SO ₂	24-hr	800 (0.3)	1,600 (0.6)	2,100 (0.8)
CO	8-hr	17,000 (15)	34,000 (30)	46,000 (40)
NO ₂	24-hr	282 (0.15)	565 (0.3)	750 (0.4)
NO ₂	1-hr	1,130 (0.6)	2,260 (1.2)	3,000 (1.6)
O ₃	1-hr	400 (0.2)	800 (0.4)	1,000 (0.5)

White Pine Energy Station Affected Sources

Table 11.3 lists the sources and emitted pollutants at the Facility that can be reduced or controlled in the event of an episode.

Table 11.3 – Facility Sources Affected

Source	Pollutant
PC Boilers	CO, NO _x , SO ₂ , PM ₁₀ , and VOC (ozone precursor)
Auxiliary Boiler	CO, NO _x , SO ₂ , PM ₁₀ , and VOC (ozone precursor)
Coal, Ash, Carbon, and Lime Handling Sources	PM ₁₀
Roadway Travel	PM ₁₀
Emergency Diesel Engine Driven Equipment	CO, NO _x , SO ₂ , PM ₁₀ , and VOC (ozone precursor)
Fuel Tanks (filling operations only)	VOC (ozone precursor)

Proposed Emission Reductions

WPEA is proposing reductions for each Stage as shown in Table 11.4 below. The reductions shown will only be put into place if the pollutant triggering the Stage alert is emitted by the source group.

Table 11.4 – Facility Reductions

Source	Alert	Warning	Emergency
PC Boilers	25% emission reduction unless operation required for grid stability	50% emission reduction unless operation required for grid stability	100% emission reduction unless operation required for grid stability
Auxiliary Boiler	100% emission reduction unless operation required for safe shutdown	100% emission reduction unless operation required for safe shutdown	100% emission reduction unless operation required for safe shutdown
Coal, Ash, Carbon, and Lime Handling Sources	All operations minimized to extent possible.	All operations minimized to extent possible.	All operations minimized to extent possible.
Roadway Travel	All non-essential roadway travel suspended	All non-essential roadway travel suspended	All non-essential roadway travel suspended
Emergency Diesel Engine Driven Equipment	100% emission reduction unless operation required for emergency purposes	100% emission reduction unless operation required for emergency purposes	100% emission reduction unless operation required for emergency purposes
Fuel Tanks (filling operations only)	25% emission reduction	50% emission reduction	100% emission reduction other than critical operations

PM₁₀ Emissions

In the event that a Stage alert is triggered for PM₁₀ emissions, actions will be taken to minimize operation of material handling sources. Coal and ash storage areas will be utilized to minimize handling operations. Operation of bulldozers or other equipment in the coal piles and on-site disposal facility will be shut down unless operation is required to prevent damage or possible injury. Additional surface stabilization in the form of water sprays will be utilized on exposed areas, the active coal piles, and, if appropriate, the paved and unpaved roadways.